L Number	Hits	Search Text	DB	Time stamp
1	328	hand\$1 or palm\$1)near3 recogni\$5)and(ratio\$2	USPAT;	2004/10/27 13:12
		near5(area\$1 or surface\$1 or volume\$1 or	US-PGPUB;	
		perimeter\$1 or circumference\$1 ot length or	EPO; JPO;	•
		width	DERWENT;	
			IBM TDB	·
2	2	hand\$1 or palm\$1)near3	USPAT;	2004/10/27 13:13
		recogni\$5) with (ratio\$2 near5 (area\$1 or	US-PGPUB;	
		surface\$1 or volume\$1 or perimeter\$1 or	EPO; JPO;	
		circumference\$1 ot length or width	DERWENT;	
		,,,,	IBM TDB	
3	1	hand\$1 or palm\$1)near3	USPAT;	2004/10/27 13:15
		recogni\$5) with (ratio\$2 near2 (area\$1 or	US-PGPUB;	2001, 20, 27
		surface\$1 or volume\$1 or perimeter\$1 or	EPO; JPO;	
		circumference\$1 ot length or width	DERWENT;	
		orreading of the second of wracing	IBM TDB	
4	0	(hand\$1 or palm\$1)near3	USPAT;	2004/10/27 13:17
		recogni\$5) and (ratio\$2 near5 (area\$1 or	US-PGPUB;	2004, 20, 2, 13.1,
		surface\$1 or volume\$1 or perimeter\$1 or	EPO; JPO;	
		circumference\$1 ot length or width)	DERWENT;	
	e.	and((hand\$1 or palm\$1)near3	IBM TDB	
		recogni\$5) with (outer near3 sides)	1BM_1DB	
5	32		USPAT;	2004/10/27 13:18
-	32	recogni\$5) and (ratio\$2 near5 (area\$1 or	US-PGPUB;	2004/10/27 13:18
		surface\$1 or volume\$1 or perimeter\$1 or	EPO; JPO;	
		circumference\$1 ot length or width)	DERWENT;	
		and((hand\$1 or palm\$1)near3	1	
		recogni\$5) and (outer near3 sides)	IBM_TDB	
6	32		USPAT;	2004/10/27 13:20
Ū	32	recogni\$5) and (ratio\$2 near5 (area\$1 or	US-PGPUB;	2004/10/27 13:20
		surface\$1 or volume\$1 or perimeter\$1 or	1	
		circumference\$1 ot length or width) and	EPO; JPO; DERWENT;	
		((hand\$1 or palm\$1)near3	IBM_TDB	
		recogni\$5) and (ratio\$2 near5 (area\$1 or	IBM_IDB	
		surface\$1 or volume\$1 or perimeter\$1 or		
		circumference\$1 ot length or width)		
		and((hand\$1 or palm\$1)near3		
7	228	recogni\$5)and(outer near3 sides)) (hand\$1 or palm\$1)near3	IICDAT.	2004/10/27 12:20
′	228	recogni\$5)and(ratio\$2 near5(area\$1 or	USPAT;	2004/10/27 13:20
		surface\$1 or volume\$1 or perimeter\$1 or	US-PGPUB;	
			EPO; JPO;	
		circumference\$1 ot length or width) and @ad<20010109	DERWENT;	
8	21	((hand\$1 or palm\$1)near3	IBM_TDB	2004/10/05 12 00
-	21	recogni\$5)and(ratio\$2 near5(area\$1 or	USPAT;	2004/10/27 13:20
		surface\$1 or volume\$1 or perimeter\$1 or	US-PGPUB;	
		circumference\$1 ot length or width) and	EPO; JPO;	
		((hand\$1 or palm\$1)near3	DERWENT;	
		recogni\$5)and(ratio\$2 near5(area\$1 or	IBM_TDB	
	,	surface\$1 or volume\$1 or perimeter\$1 or		
		circumference\$1 ot length or width)		
		and((hand\$1 or palm\$1)near3		
		recogni\$5)and(outer near3 sides))) and		
ļ		ead<20010109	1	
		@du<20010103		

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Grasp recognition using a 3D articulated model and infrared images

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Number of Pages: 4 vol.lxxiv+3828 Inspec Accession Number: 7922758

Abstract:

A technique to **recognize** the shape of a grasping **hand** during manipulation proposed; which utilizes 3D articulated **hand** model and a reconstructed 3D **v** from infrared cameras. Vision-based **recognition** of a grasping **hand** is a tou because a **hand** may be partially occluded by a grasped object and the **ratio** changes along the progress of the task. To **recognize** the shape in a single ti robust **recognition** method of an articulated object is proposed. In this meth volumetric representation of a **hand** is reconstructed from multiple silhouette 3D articulated object model is fitted to be reconstructed data to estimate the the joint angles. To deal with large occlusion, a technique to simultaneously e time series reconstructed **volumes** with the above method is proposed, which automatically suppress the effect form badly reconstructed **volumes**. The protechniques are verified in simulation as well as in a real world.

Index Terms:

cameras gesture recognition image reconstruction image representation image sinfrared imaging manipulators parameter estimation robot vision 3D articulated ha 3D articulated object model 3D volumetric representation grasping hand infrared ca infrared images multiple silhouette images reconstructed 3D volume reconstructed series reconstructed volumes estimation vision-based recognition

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